NOVEL APPROACH FOR TRAFFIC CONTROL SYSTEM

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ABSTRACT

Vehicular traffic system is very beneficial for valid intersecting control of traffic. It is very importance to require sophisticated and coordination between traffic light to smooth traffic controlling. This project not only focus on traffic controlling but also implements much more services which is very important to smooth traffic control system. It involves monitoring and accurate time controlling lights, emergency vehicle priority based module, and crowd density which focus on priorities release traffic based on more lane traffic. The electronic system consists of controller and sensors to sense the vehicles and generate input/outputs regarded for controlling of traffic.

Keywords:-Piezo sensor, Pressure Sensor, Traffic Congestion.

I.INTRODUCTION

Traffic congestion is a harsh problem in many modern cities around the world. Traffic congestion has been causing many critical problems and challenges in the major and most populated cities. To travel to different places within the city is becoming more difficult for the travelers in traffic. Due to these congestion problems, people lose time, miss opportunities, and get annoyed. Traffic congestion directly impacts the companies.

Due to traffic congestions there is a loss in productivity from workers, trade opportunities are lost, delivery gets delayed, and thereby the costs goes on increasing. To solve these congestion problems, we have to build new facilities and infrastructure but at the same time make it smart. The only disadvantage of making new roads on facilities is that it makes the surroundings more congested. So for that reason we need to change the system rather than making new infrastructure twice. Therefore many countries are working to manage their existing transportation systems to improve mobility, safety and traffic flows in order to reduce the demand of vehicle use. For smooth controlling it requires accuracy between coordination in traffic light and required accurate timing and also it is important point of view to take proper decision for controlling traffic system. The idea planned in this paper involves use of Wireless sensor network technology to logic attendance of Traffic near any circle or junction and then able to method the Traffic based on Traffic ease of use or we can say thickness in need direction. This system does not need any scheme in vehicles so can be implemented in any Traffic scheme rather simply with less time and less costly also.

II.LITERATURE REVIEW

1. Intelligent Traffic Light and Density Control using IR Sensors and Microcontroller

Ms.Promila Sinhmar

In this paper use the SIM card and mobile phone due to this give the message to the user there is the traffic jam. But, this system is only applicable in coverage area this is the drawback of the system.

2. Traffic Light Control System for Emergency Vehicles Using Radio Frequency

N.M.Z.Hashim, A.S. Jaafar,N.A.Ali.

This system reduced accidents which happened at the traffic light intersections because of other vehicle had to huddle for given a special route to emergency vehicle.

3. **Traffic Light Priority Control for Emergency Vehicle Using RFID**

Suresh Sharma, Alok Pithora, Gaurav Gupta, Mohit Goel, Mohit Sinha

In this paper only use in heavily traffic area and especially those related to image processing and beam interruption techniques.

III.PROPOSED METHDOLOGY
1.CROWD DENSITY

Due to heavy traffic in the road many people are suffer even through there is traffic signal available at various places, it is not easy to control the crowd. In order to avoid traffic problem heavily on the road, we designed and developed a system is called as crowd density with wireless system. In that system give the chance each and every road for free the traffic whether the road having maximum weight or having minimum weight. By using this system problem of traffic are generate. Due to this problem people loss their time, as well as opportunities and not reach in time at their destination. To overcome this problem we are make the new traffic system. In crowd density used pressure sensor, it is used for to count the pressure that road having maximum crowd to give first priority to release the traffic. If crowd will be more than another three road then that time automatically time will increase of that lane. This sequence rotated will be going as per clockwise direction. Because of increasing traffic there is necessary to manage crowd to avoid accident so the system consist of crowd management module to handle it efficiently.
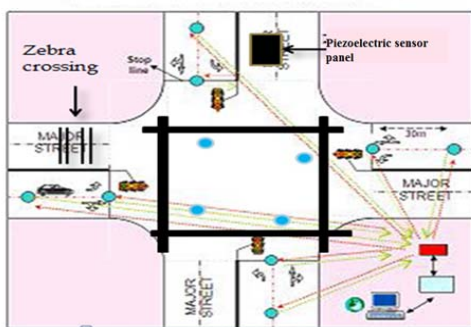

Fig no.1: Crowd Density for Traffic Control System

2.ZEBRA CROSSING

Most of people break the traffic rule and face the problem. So, overcome this problem we are using the zebra crossing. There are alternate black and white stripes painted parallel to the road is known as zebra crossing. So in this project camera and the pressure are used. The Camera is placed at the road on the signal and pressure are placed the level of road at signal and give the protection to switches by using crystal panel. When the vehicle on signal and try to break the traffic rule the pressure will press at that time and camera will capture image of that vehicle. And store this image into the database; in the database the whole information is present about vehicle. In this way by using this system reduce accident problem. And people have to follow the traffic rule. In future if any people break the rule then that time sends the message to next signal as well as that person (e.g. email, message etc.) by using GSM.

Fig no.2:- Zebra Crossing for Traffic Control System

3.EMERGENCY VEHICLE

We can see number of vehicle increasing day by day. So there are traffic congestion and transportation delay.

So at that time the vehicles like Ambulance, V.I.P vehicles and Fire Brigade are also jammed in traffic and waste their important time. The proposed system provides quality of service to Emergency vehicles. The RFID card attach above the road before signal at range in between 500m to 1000m.Every vehicle has a RFID enabled device that stores a vehicle identification number (VIN). Every vehicle has its unique VIN number that provides the information regarding the priority of the vehicle and type of the vehicle. With the help of VIN we can uniquely identify the vehicle & its owner. Vehicle Identification Number: In the proposed work RFID, tag will store a Vehicle Identification Number.

This number is divided into 3 parts: First part represent the priority of the vehicles. Next part represents the type of vehicle. When emergency vehicle identify the system gets the alert and free that specific road before come emergency vehicle and give the first priority to emergency vehicle.

Fig no.3:- Emergency Vehicle for Traffic Control System

4.ELECTRICITY GENERATES:

Electricity has turn into a main need of current day development and its demand is rising rapidly. Hence we need a non-conventional method of power generation. This paper stress one of the capable electricity invention method using piezoelectric sensors. Vibration energy that is generated by vehicle movement on the road converted on the road and converted into electrical energy by using piezoelectric sensor. Instead of making an allowance for traffic as a trouble we can take it as an opportunity to produce energy. We are creating electricity by using vehicle pressure. When vehicle come towards signal it will create the electricity and signal light will glow. In case of a piezoelectric transducer the transduction is from mechanical to electrical energy.

There are two types of common mode
 1) Voltage Mode 2) Charge Mode.
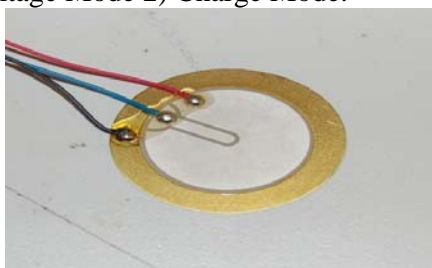

Fig no.4:-Piezoelectric Sensor
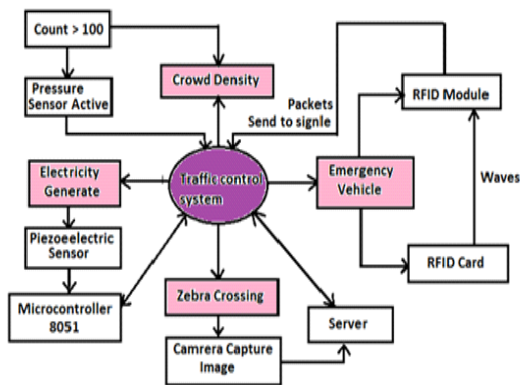
IV.FLOW DIAGRAM

Fig no.5: Flow diagram of Novel Approach for Traffic Control System

V.RESULT

The overall study showed that there is a significant reduction in traffic vehicle. The vehicle release in particular direction, we have used automatic timer depends on the crowd on that road by first priority. And at the same time emergency vehicle gets first priority. The electricity generates by using piezoelectric sensor and it can be save the electricity. And also, we have improved the zebra crossing behavior. The data proved that automated pressure detection capabilities can provide significant operational and safety benefits.

VI.SCENARIO OF SYSTEM

It is software which masks the functionality of the system and makes the system to execute under its control. We have shown the system execution. In VB.net to design form1 we used various toolboxes like menu strip, group box, etc. Coding of each toolbox used is created at back end of the designed form.
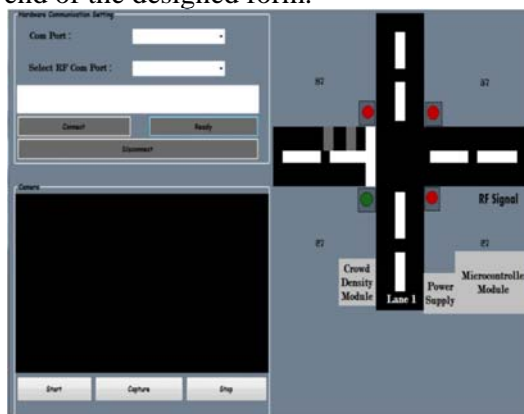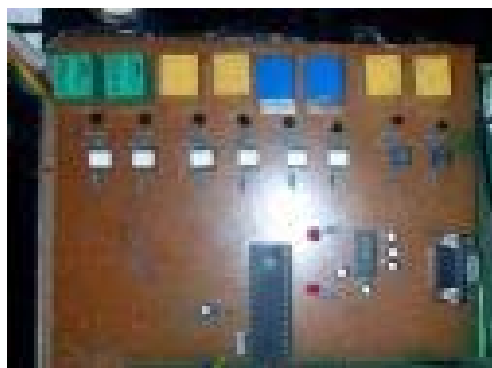

Fig no.6:- Scenario of System

Fig no.7:-Development of Hardware

VII.CONCLUSION

This paper has summarized the results of our idea based on piezoelectric sensor. The novel approach of Traffic Control System gets reliable traffic control system and it is beneficial for people to avoid crowd. The RFID card is used to

detect the emergency vehicle and by using this System can be managed traffic easily

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